Psychosocial interventions for supporting women to stop smoking in pregnancy

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Authors' objectives

Background: Tobacco smoking in pregnancy remains one of the few preventable factors associated with complications in pregnancy, stillbirth, low birthweight and preterm birth and has serious long-term implications for women and babies. Smoking in pregnancy is decreasing in high-income countries, but is strongly associated with poverty and increasing in low- to middle-income countries. Objectives: To assess the effects of smoking cessation interventions during pregnancy on smoking behaviour and perinatal health outcomes. Search methods: In this fifth update, we searched the Cochrane Pregnancy and Childbirth Group's Trials Register (1 March 2013), checked reference lists of retrieved studies and contacted trial authors to locate additional unpublished data. Selection criteria: Randomised controlled trials, cluster-randomised trials, randomised cross-over trials, and quasi-randomised controlled trials (with allocation by maternal birth date or hospital record number) of psychosocial smoking cessation interventions during pregnancy. Data collection and analysis: Two review authors independently assessed trials for inclusion and trial quality, and extracted data. Direct comparisons were conducted in RevMan, and subgroup analyses and sensitivity analysis were conducted in SPSS. Main results: Eighty-six trials were included in this updated review, with 77 trials (involving over 29,000 women) providing data on smoking abstinence in late pregnancy. In separate comparisons, counselling interventions demonstrated a significant effect compared with usual care (27 studies; average risk ratio (RR) 1.44, 95% confidence interval (CI) 1.19 to 1.75), and a borderline effect compared with less intensive interventions (16 studies; average RR 1.35, 95% CI 1.00 to 1.82). However, a significant effect was only seen in subsets where counselling was provided in conjunction with other strategies. It was unclear whether any type of counselling strategy is more effective than others (one study; RR 1.15, 95% CI 0.86 to 1.53). In studies comparing counselling and usual care (the largest comparison), it was unclear whether interventions prevented smoking relapse among women who had stopped smoking spontaneously in early pregnancy (eight studies; average RR 1.06, 95% CI 0.93 to 1.21). However, a clear effect was seen in smoking abstinence at zero to five months postpartum (10 studies; average RR 1.76, 95% CI 1.05 to 2.95), a borderline effect at six to 11 months (six studies; average RR 1.33, 95% CI 1.00 to 1.77), and a significant effect at 12 to 17 months (two studies, average RR 2.20, 95% CI 1.23 to 3.96), but not in the longer term. In other comparisons, the effect was not significantly different from the null effect for most secondary outcomes, but sample sizes were small. Incentive-based interventions had the largest effect size compared with a less intensive intervention (one study; RR 3.64, 95% CI 1.84 to 7.23) and an alternative intervention (one study; RR 4.05, 95% CI 1.48 to 11.11). Feedback interventions demonstrated a significant effect only when compared with usual care and provided in conjunction with other strategies, such as counselling (two studies; average RR 4.39, 95% CI 1.89 to 10.21), but the effect was unclear when compared with a less intensive intervention (two studies; average RR 1.19, 95% CI 0.45 to 3.12). The effect of health education was unclear when compared with usual care (three studies; average RR 1.51, 95% CI 0.64 to 3.59) or less intensive interventions (two studies; average RR 1.50, 95% CI 0.97 to 2.31). Social support interventions appeared effective when provided by peers (five studies; average RR 1.49, 95% CI 1.01 to 2.19), but the effect was unclear in a single trial of support provided by partners. The effects were mixed where the smoking interventions were provided as part of broader interventions to improve maternal health, rather than targeted smoking cessation interventions. Subgroup analyses on primary outcome for all studies showed the intensity of interventions and comparisons has increased over time, with higher intensity interventions more likely to have higher intensity comparisons. While there was no significant difference, trials where the comparison group received usual care had the largest pooled effect size (37 studies; average RR 1.34, 95% CI 1.25 to 1.44), with lower effect sizes when the comparison group received less intensive interventions (30 studies; average RR 1.20, 95% CI 1.08 to 1.31), or alternative interventions (two studies; average RR 1.26, 95% CI 0.98 to 1.53). More recent studies included in this update had a lower effect size (20 studies; average RR 1.26, 95% CI 1.00 to 1.59), compared to those in the previous version of the review (50 studies; average RR 1.50, 95% CI 1.30 to 1.73). There were similar effect sizes in trials with biochemically validated smoking abstinence (49 studies; average RR 1.43, 95% CI 1.22 to 1.67) and those with self-reported abstinence (20 studies; average RR 1.48, 95% CI 1.17 to 1.87). There was no significant difference between trials implemented by researchers (efficacy studies), and those implemented by routine pregnancy staff (effectiveness studies), however the effect was unclear in three dissemination trials of counselling interventions where the focus on the intervention was at an organisational level (average RR 0.96, 95% CI 0.37 to 2.50). The pooled effects were similar in interventions provided for women with predominantly low socio-economic status (44 studies; average RR 1.41, 95% CI 1.19 to 1.66),
compared to other women (26 studies; average RR 1.47, 95% CI 1.21 to 1.79); though the effect was unclear in interventions among women from ethnic minority groups (five studies; average RR 1.08, 95% CI 0.83 to 1.40) and aboriginal women (two studies; average RR 0.40, 95% CI 0.06 to 2.67). Importantly, pooled results demonstrated that women who received psychosocial interventions had an 18% reduction in preterm births (14 studies; average RR 0.82, 95% CI 0.70 to 0.96), and infants born with low birthweight (14 studies; average RR 0.82, 95% CI 0.71 to 0.94). There did not appear to be any adverse effects from the psychosocial interventions, and three studies measured an improvement in women's psychological wellbeing.

Authors’ conclusions: Psychosocial interventions to support women to stop smoking in pregnancy can increase the proportion of women who stop smoking in late pregnancy, and reduce low birthweight and preterm births. US: http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD001055.pub4/abstract

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